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RESEARCH AND DEVELOPMENT

No. 44

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INTER-ASIAN AFFAIRS

SALE OF TV PLANT TO CHINA HINGES ON DELETION OF IC FACILITIES

Tokyo KYODO in English 0459 GMT 23 Jun 78 OW

[Text] Tokyo June 23 KYODO--The government has reportedly advised three electronics manufacturers vying to sell China facilities to produce color television sets to modify or give up their plans because of Western military concern.

According to government sources, the Ministry of International trade and industry (MITI), whose permission is necessary for the deal, advised the companies that the Coordinating Committee for Export to Communist area (COCOM) would probably block the sale of the TV plant to China because of its electronic circuitry production potential.

The plant export by either Tokyo Shibaura Electric Co. (TOSHIBA), Hitachi, Ltd. or Matsushita Electric Industrial Co., had been expected to be one of the biggest single items under the eight-year private level Japan-China trade agreement signed in Peking February 16.

COCOM, a 15-nation panel of NATO members and Japan that monitors technology transfers to communist nations, approved a yen 2 billion sale by Hitachi earlier this year of two weather forecasting computers to China after the capacity of their memory devices was sharply reduced.

According to the sources, the color TV plant sought by Peking could produce integrated circuitry useful in missile trajectory control systems. After studying COCOM's present position and the Western international climate. MITI concluded that the current plans of none of the three companies would be approved, the sources added.

The ministry advised the firms to offer TV plants without integrated circuitry production facilities, they said, but Peking insists that such facilities be included in the deal.

The situation looks so unpromising that Toshiba and Hitachi have already recalled their salesman from China, the sources said.

CSO: 5500

PEOPLE'S REPUBLIC OF CHINA

BRIEFS

KIANGSI PHOTOTELEGRAPH SYSTEM--Starting from 1 May, single circuit phototelegraph installations have successively come into operation in Nanchang, Kanchou prefecture, Chiuchiang prefecture, Fuchou prefecture, Ichun prefecture, Chingkangshan prefecture, Shangjao prefecture, Chingtechen municipality and Pinghsiang municipality. The Chiangfeng material plant and the Pinghsiang municipal post and telecommunication bureau respectively successfully trial produced the single circuit phototelegraph equipment last year. They are currently producing the equipment in an attempt to provide the phototelegraph equipment for all areas at or above county level in the province before the end of this year. [Nanchang Kiangsi Provincial Service in Mandarin 1100 GMT 23 Jun 78 HK]

CSO: 5500

MINISTER VANCHEV SPEAKS AT PLENUM OF COMMUNICATIONS WORKERS

Sofia IMPULS in Bulgarian 30 May 78 pp 1, 2

[Speech by Engr Pando Vanchev, minister of communications at the Third Plenum of the Central Committee of the Trade Union of Communications Workers held on 26 May 1978; the speech is given in an abridged version]

[Text] A week ago we held an Enlarged Board Meeting, as we called it. In essence, it was a national conference which thoroughly examined all questions. At present in using the words of Comrade Todor Zhivkov that there must be a prompt direct intervention, we must begin sharply to act in order to alter the situation. And immediately another question arises: should we not begin theorizing on planning, the socialist organization and the brigade organization of labor. But in essence we in practical terms do nothing. The socialist organization of labor and planning must be mentioned, but rather we should do something and stop talking. Let us examine, for example, the actual setting of standards. What standards are required at the rayon communications station at Trun in order to clean the corridors and to eliminate broken locks? And what standards are required at the rayon station in Khisarya to make the telephone operators polite to the citizens? A standard is one thing, that is to work with a living person and he must become what he must be. Again let me quote the words of Comrade Todor Zhivkov: There is no doubt that we will build all the plants which we have planned, that we will build all the projects which we have planned, that we will build all the housing which we have planned, and again we will increase the fixed capital of Bulgaria. This will be done. But I am interested in what man will become. In the same manner he is created and born both in the capitalist and the socialist world. After he is born, he becomes one thing in one system, and another in the other. How, according to each system, man will be created and adapted to carry out those things which must be done depends solely upon the leaders, that is, upon what situation is created, what order will be created and what measures will be taken. But in order to speak of these questions, one must be among the people. We must have daily and hourly contact with the production collectives where our questions concerning communications are determined. Lamentably in certain instances we hear this, we understand it at the moment we are in this room, and after leaving it we continue to work as we did before.

We have said all of this before. We have spoken of defect-free work, of order at the work areas, of the competition, of the saving of materials, of discipline and the setting up of boards on which the names are written of those who serve the citizens, and on public control.... What have we not said. But what if we only talk of these things and do not obtain results? We cannot justify ourselves by the system as it is more special. The system is a system. The citizens must be served and there must be high quality services. How this will be done the directors of the okrug enterprises and the Sofia enterprises will say the best. Even if there is no scientific institute, they are obliged to provide high quality services for the population and not await a scientific organization, and each day they see many more things than a scientific worker. What science is required in order to maintain the A-29 selectors as they should be? Static occurs in the cables where there are connections if they have not been well done, or if the cable has been corroded or gotten wet, particularly when there is plastic insulating. The sore points of our system are where there are contacts: where the link is permanent there is no static and where it is broken irregularities and static appear. These are elementary matters to which we do not pay attention. If we clean one A-29 selector of dust carefully, everything will be in proper order, but if we do it roughly, we will not have any connection. But when these jobs are performed, there is not a leader at the work areas. The same is true, for example, at the central offices. It is said that they have a pernicious influence on the proper working order of the equipment in the communications system. But no one would dare to say to the directors that they prevent savings! Because he does not want to take a risk or disturb the calmness. But Comrade Todor Zhivkov has spoken of reasonable risk. I feel that I am speaking to a competent audience and can say that we are still developing our system. For this undoubtedly millions of leva are needed, but we need most live people who can gain from this system all that it is capable of. Let us not forget that in 1979, all the information of our economy will pass through the communications system. Then what will happen? And who will tolerate thousands of disconnections? And with reason we will be held responsible. In electrification penalties are paid, and the same will be imposed on us for interrupted communications.

The glorious postmen. We are used to hearing this, and it is accurate for the past. But they must also be glorious today. Let all become pacesetters and advanced workers in our production and this will immediately be perceived by the citizens. And this depends upon how we maintain our production. For this reason operations are a very important process and for this reason operations are the most important subsector in the Ministry of Communications. Ideally you can plan and have an ideal organization, but if you do not create an ideal organization for the maintaining of the equipment, you will not do anything. Equipment does not tolerate weaknesses. And if a person has weaknesses, then there are also weaknesses in the equipment. Equipment is a very good servant, but a very bad master, when you neglect it or do not want to work.

Then Minister Pando Vanchev spoke of certain oversights in communications construction, the development of the rural telephone system, and of failures in providing the citizens with telephone and parcel post services.

Will we allow ourselves, the workers, white collar personnel, specialists and leaders of communications, with the great technical opportunities of our system, to lag behind the other enterprises and sectors? This is the great task which presently confronts us. The administrative leadership, the okrug leadership, all the trade union organizations and all the local trade union committees must involve the entire collectives in carrying out the tasks posed by the National Party Conference, by the theses and specifically for our system, by the Enlarged Board Meeting of the Ministry of Communications and affirmed at this plenum. For you are the people who will carry out these tasks.

I wish you success in your work!

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CSO: 5500

BULGARIA

REPORT ON CONFERENCE OF MINISTRY OF COMMUNICATIONS

Sofia IMPULS in Bulgarian 23 May 78 p 1

[Unattributed report on the Enlarged Board Meeting of the Ministry of Communications]

[Text] The remarkable documents from the National Party Conference are presently being reviewed throughout the nation. In light of the new requirements, the worker collectives of all levels are making a sober re-evaluation of all their previous work, they are reviewing its content, and are searching for ways to enter new, brighter expanses for the developing of creativity and initiative by each individual worker and the collective as a whole.

The sense and content of the new party documents have been understood by everyone, to move only forward at a pace worthy of our scale and corresponding to the tasks of the moment. And this can be done only if we welcome the new and eliminate all that is an obstruction in daily work.

This was the spirit predominating at the Enlarged Board Meeting held on 19 May 1978 in the main hall of the STTS [?Sofia Telephone and Telegraph Office]. Participating in its work were: The leadership of the ministry, the bureau of the Central Committee of the Trade Union [TsKPS] of Communications Workers, the directors, party secretaries and chairmen of the unified trade union committees, and others. The honored guest of the session was Comrade Krustyu Trichkov, candidate member of the Politburo of the BCP Central Committee, the deputy chairman of the Council of Ministers and the chairman of the Committee for State and People's Control.

The chairman of the TsKPS, Engr Yonko Chengelov opened the board meeting with a brief introductory speech. He gave the floor to the Minister of Communications, Engr Pando Vanchev who gave a truly remarkable report in its profound analysis of the facts. The report provided a thorough evaluation of the activities of the various divisions, of the characteristic weaknesses, and indicated the decisive role of the subjective factor.

After this which was listened to with unflagging attention, the floor was given to Comrade Krustyu Trichkov who took up the tasks which the party and government are entrusting to communications in order that they meet the new requirements and the needs of the national economy.

With this the board meeting concluded its work. The chairman of the TsKPS who led the session thanked Comrade Trichkov for participating in the work of the board meeting and for the valuable recommendations, and assured him on behalf of everyone that the communications workers will devote their strength, knowledge and ability in order to carry out the decisions of the National Party Conference.

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CSO: 5500

BULGARIA

MINISTER EXPOSES WEAKNESSES IN COMMUNICATIONS

Sofia IMPULS in Bulgarian 23 May 78 pp 1, 3

[Speech by Engr Pando Vanchev, minister of communications, at the Enlarged Board Meeting of the Ministry of Communications held on 19 May 1978 in Sofia; the speech is given in an abridged form]

[Text] Some 30 days have passed since the National Party Conference, since that grandiose forum which disclosed the moral and political unity of our people, and its solidarity around the party line.

The great results of the conference will remain permanently in the conscience of our people. They are a new sign of the creative April approach of the party to the questions of our economic development. In all the discussions and creative conversations concerning the work and materials of the National Party Conference, the basic place was given over to that great and creative contribution which had been made to its preparations by the first leader of the party and the state, Comrade Todor Zhivkov.

The report and concluding speech of Comrade Zhivkov to the conference and the theses approved by it are a practical program for the complete realization of the decisions of the 11th Congress and the July Central Committee Plenum. From these remarkable materials stem very serious tasks both for our entire economy as well as for the labor collectives of employees from the Ministry of Communications.

The National Conference outlined the strategy for the development of the nation during the following years. By improving the socialist organization of labor and by planned leadership of the economy with the counterplans, material expenditures must be reduced by an additional 5 percent on an average annual basis, social labor productivity must rise by 4-5 percent, and the utilization of social capital up to 10 percent. The amount of incomplete construction must be reduced so that by 1980 it will reach not more than 80 percent of the annual volume of capital investments.

These are the directives of the National Party Conference. They oblige us, as a component part of the national economy, to make every effort to carry them out. And from the results which we will achieve an evaluation will be made of our quality and of the effectiveness of our work as leaders of this important sector.

1. The Socialist Organization of Labor

At the present stage of building a developed socialist society in our nation, the improving of the socialist organization of labor is the main element in activating the reserves of the economy, for improving efficiency and quality, and for most fully utilizing the achievements of scientific and technical progress in the various spheres of social life.

For this reason at present we are raising this major question with such concern and awareness because it is of decisive practical, political and scientific-technical significance in our basic areas of work.

In the spirit of the National Party Conference a critical analysis of our activities must be made from the standpoint of the socialist organization of labor and from the positions of the great idea of Comrade Todor Zhivkov concerning the dialectical unity of the basic elements in the production process, that is, live labor, the subjects of labor and the means of labor.

What does it mean to make a socialist organization of live labor for us? This means to create those working conditions whereby the subjective factor --man, our worker in the communications system--will develop all his creative possibilities and give all that he is capable of.

Very disconcerting, comrades, is the wasting of precious time and highly paid live human labor. This neglectful attitude toward one of the most important economic categories of our existence--time and labor--is dangerous and harmful.

In practice this means that we can do more but are giving less, and that we must work a certain time but are working less time.

The work of executives is rather intense. But this intenseness is often increased by ourselves. There are very few instances when a certain task is posed and it is carried out without verbose stipulations and explanations. Ordinarily a specialist gives lengthy and extensive explanations which often have no direct bearing on the task itself. And there are oddities when the time for carrying out an assignment is much shorter than the time wasted on listening to the explanations which precede it. Some specialists use other methods. They accept the task assigned to them without argument, and sometime later it comes back as a boomerang for the leader, but now in the form of a solid and bulky report or explanatory note with specific posed problems which the leader who has given the assignment must carry out himself.

What can be done, can we not tame this flood, build a dam or prevent the flood of paperwork?

This question has been repeatedly posed for solution by the leadership of the ministry, but the flood of paperwork continues to flow, to expand and drown us.

We have not fully solved the problems concerning the most rational use of live labor.

Here is a case of the telephone payment office at the STTS [?Sofia Telephone and Telegraph Office].

In 1976, here the personnel numbered 104 persons, of which 80 were cashiers, 19 inspectors and 5 in the leadership. At that time they carried out all the work related to the collecting, accounting and controlling of the telephone fees in the capital.

In order to make it easier for the citizens, I ordered that the payment of the fees be carried out at the post offices.

The instructions were to also reduce the personnel at the telephone payment office proportionally to the reduced work, because according to the labor standards for these activities 18 persons of listed production personnel were required.

However, what happened?

The telephone payment office was released completely of its obligations to collect the regular telephone fees. But this year, as unbelievable as it may sound, the personnel of the telephone payment office, in spite of the fact that a large portion of its work had been taken away, grew to 106 persons. In addition, cashiers at 108 Sofia post offices were added, and they do not receive additional remuneration for this work.

A year ago the leadership of the STTS was instructed to eliminate this anomaly. But is the leadership of the enterprise to blame? Why did not the corresponding services at the ministry give orders to reduce the staff according to the labor standards?

Comrade Vanchev took up in detail the case of an express telegram which Comrade Slaveyko Velkov sent from the village of Dolna Kovachitsa in Mikhaylovgrad Okrug to his spouse in Sofia and which announced the death and burial of his mother. The telegram was delivered on the following day at 1000 hours.

A check established, continued Minister Vanchev, that the telegraph messenger was not to blame. It was completely a question of technology which did not stop the messenger from taking the telegram home, keeping it overnight and returning it to the post office on the following day, regardless of its content.

Immediately the question arises of what is being done by the director of operations and support of the postal system Stoyadin Petkov and the specialists around him? What is being done by the director, the administrative, party and trade union leadership of the Sofia Post Office in order that similar errors do not happen in their work?

Repeatedly we have spoken of a fundamental change in the attitude toward the served citizens, but obviously the leaders of various levels have still not taken note.

All these lamentable things rest fully on the socialist organization of live labor and bear directly on improving the technology of communications services and the indoctrination and training of the personnel. A year ago we sharply posed the question of a second profession for our workers. This was essential namely to be able by them to overcome the bottlenecks, the peak moments and the tension in our work. A decision was taken on this question, but it has still not been carried out.

The training of our personnel must not be solely of a theoretical sort. They must in practice assimilate the complexity of the communications profession, they must be prepared for new communications equipment which will be put into operation in the future. The workers must become true experts in their job and make their presence felt.

Recently I spoke with a young engineer from the Crosspoint Station and who strongly insisted that he be transferred to the ministry for work. I asked him: "Why do you want to change, were you not instructed for this, this is creative work and your future is here?"

I did not obtain a clear answer from him, but I understood his motives. He was looking for an easier and more highly paid job.

This is only a portion of the examples of the incorrect use of live labor. In all our subsectors such examples can be found. They are found in telephone and telegraph communications, in radio and television where we have not sufficiently introduced remote and automatic control of the equipment.

You remember that enlarged board meeting to the presidium of which we invited our technician from the Kotel ATTs [automatic telephone exchange]. He had made a rudimentary but very effective technical device for testing the switching equipment of the 1,000-number A-29 ATTs. By using it live labor could be saved. But why did it not gain broad use? The specialists were disdainful of this device and viewed it as a scientific subject which had not been finally completed and was expensive. In this manner we neglected a good opportunity which could have helped us in solving this basic question of the efficient use of live labor.

The Party Conference and Comrade Todor Zhivkov personally have indicated to us one of the secure and tested ways for solving this problem, namely the brigade form of labor and internal economic accountability.

Regardless of the fact that the production and sale of the services are not carried out at the same enterprise, all the conditions are present for introducing the brigade organization of labor and wages.

The brigade form for the organization of labor can be introduced in all the communications subsectors including telegraph and telephone, post, radio and television, motor transport, and so forth.

In applying the brigade form for the organization of labor, specific features will appear. For example, at one ATTs it is possible to consider as a brigade all the personnel serving the exchange, including also the personnel maintaining the cable system. In this manner the wages of everyone will be linked to the end results of the work of the entire ATTs. This will create opportunities to unite the collective, to seek out reserves, to improve the quality of telephone services and to achieve a maximum effect from the operation of the equipment. The telephone brigades also must include the technical maintenance personnel so that there is a collective incentive to achieve the results.

The leadership of the ministry feels that the brigade organization in the communications sector must be introduced by a thorough study of all the specific problems. During the beginning of the second 6 months of this year, we must begin experimenting with it at certain enterprises such as the STTs, the Sofia post office, and the okrug communications administrations in Plovdiv, Veliko Turnovo, Varna and elsewhere, and on the basis of the obtained results introduce it in the entire communications system.

It is very important even at the outset, in organizing the brigades, to ensure the most suitable structure and to make a careful selection of their personnel. This is essential because the brigade organization of work has a qualitatively new content. It completely encompasses and links the work methods and the end results with labor remuneration.

It is pleasing to note that many people are already thinking about this question, including specialists and leaders. The rayon communications office in the town of Lom is making the first step, in converting to the brigade form of work. Their example must be followed by all our divisions and groups.

Another question which the party conference examined was the question of the saving of materials, raw products, fuel and energy in our national economy. The subjects of labor and the valuable materials of communications are the wealth of the people, and we are obliged as good managers to safeguard them, to save them and consume them thriftily.

But what do the data show?

In 1977 alone, in the divisions of the Ministry of Communications, material losses occurring because of the most different factors amounted to more than 1.15 million leva.

This unpleasant fact shows that in our system there still are isolated phenomena which run counter to the spirit and ideas of the July Plenum of the BCP Central Committee.

When we speak of materials and valuable materials, we cannot overlook material supply as an important question for the communications system.

In order not to belabor this problem, I will use an example and you can judge for yourselves.

During the period from 1974 to 1976, material and technical supply of communications has purchased 4 million leva worth of unfinished and incomplete products from the enterprises of the Ministry of Electronics and Electrical Engineering. This included switching, radio relay and multiplex equipment and for this thousands of dollars were required in order to put it into service.

The Ministry of Electronics, continued Comrade Vanchev, is no longer involved with this equipment and does not allocate foreign exchange for its completion. We must allocate the foreign exchange, from our own reserves which we do not have, and the question remains pending.

He stressed that the materials and raw products are not managed well, and that in the warehouses there are numerous unused spare parts, nonferrous metals and copper needed for cables.

A third element in the dialectical unity of the socialist organization is the implements of labor which we use for providing communications services and for communications construction. Everywhere that the physical plant of communications is in operation, there must be a categorical obligation for rapid introduction, complete assimilation and effective use of communications equipment for the sake of the main goal: effective and high quality communications services.

The fixed capital of the Ministry of Communications is already approaching 1 billion leva. We cannot say that we have reached the limit in using our physical plant and that we cannot achieve more from this. But there are also concealed possibilities. One significant reserve for more fully utilizing telephone equipment is the connecting of the internal okrug telephone systems to the national network during the nighttime hours.

The citizens would be satisfied, income would be received, but our specialists up to now cannot decide whether this proposal is promising.

Even in 1977, the task was posed for the specialists at the ministry whether the central automatic telephone exchanges could be interconnected by radio relay lines. The task was accepted, but a month later I was informed that this could not be done and that it was expensive for Bulgaria. However, none of the specialists made an analysis and did not competently prove that this idea could not be realized and was economically disadvantageous.

Or the question of utilizing concentrators and which also was raised 2 years ago. In the advanced nations over this period a revolution has been

made in introducing new equipment, but in Bulgaria during this time no one has been able to work out this problem to a degree of a technical solution which is to be introduced.

The fixed productive capital is also ineffectively used in the radio and television subsector, continued Minister P. Vanchev. Expensive transmitters are operated only 4 hours a day as an average, and cannot cover even the expenses for their maintenance. The leadership of the enterprise must show greater tenacity over the leadership of Bulgarian radio and Bulgarian television, and must seek out all hidden reserves. He described a case of how over the period of several months the leaders had found a way to reduce the control figures in the plan by 1.3 million leva, and immediately after this, increased them by 1.3 million leva.

Such an approach to the work is not in accord with the requirements of the party and government documents, continued Comrade Vanchev. This shows a narrow departmental attitude by the leaders of this enterprise.

Other characteristic indicators of the ineffective use of the means of labor are stoppages caused by damage done to communications equipment. The generalized data indicate that in 1977, the total down time of long-distance communications caused by various failures amounted to 370,000 channel-hours. In addition during the same year 86,000 state and private telephones were disconnected.

Particularly dangerous are the emergencies and stoppages during peak moments of the communications system.

When there is a peak, intense moment for our equipment and for the personnel operating it, their leaders are absent precisely then.

Of particular importance is the organization of the implements of labor at the Telekomplekt ISO [?Engineering Organization for Complete Telecommunications Systems].

Due to objective and subjective factors, at the moment incomplete communications construction amounts on a planned basis to around 26 million leva. This figure shows the great problem which confronts the leadership of our construction organization.

Equally important is the problem of the stoppage of construction equipment. During the 4 months of this year, the construction equipment of the Telekomplekt ISO for various reasons have been idled for more than 39,100 machine-hours. It is true that there are also objective reasons for the stoppage of the equipment, but in spite of all of this the figure is high, excessively high.

In emphasizing the great role which the brigade organization of labor must play in communications construction, Minister Vanchev pointed out that the

reorganization into brigades is being carried out slowly and that the converting to two- and three-shift work was unsatisfactory.

For this reason the campaign for defect-free work in communications arose spontaneously against these weaknesses of ours, against the inertia, the formalism and poor organization of labor. We have repeatedly said that the appeal for defect-free work has a great future and is of importance for communications in the nation. A majority of the working collectives has understood its profound essence and its advantages. But this initiative borne out of life has particular importance at present when we are introducing the brigade form of work, and when we are raising across-the-board the role of the socialist organization and the socialist competition.

Unfortunately, however, this has still not been fully understood in its true sense, as a strategic motto and as a necessary style of work in our communications. And here there must be no vacillating. The professional qualities of the division leaders will be judged from how this initiative is assumed by the collectives and how it is organized and led.

2. Improving Planned Leadership of Communications

The second basic question of the National Party Conference was the question of improving the planned leadership of the economy.

We are working seriously and thoroughly in this very crucial and creative area of planning at the Ministry of Communications. Practice shows that with each passing day we are mastering better this important mechanism.

Particularly useful for us have been the instructions of the Council of Ministers for elaborating engineering plans and counterplans for 1979 and 1980 and on the basis of which we have already worked out instructions for the communications divisions.

For the first time a broad range of specialists and production leaders participated in working out the engineering plans and counterplans for 1978. The planning has been improved and the proof of this is the good results in the economic growth and the improvement in the quality and efficiency of economic activities as attained during the first 4 months of the present year.

Thus, during the 4 months, the income plan was overfulfilled by 103.5 percent, or by 3,113,000 leva. And the profit plan was fulfilled by 106.4 percent and the plan for social labor productivity by 104.3 percent.

Now I would like to take up certain weak aspects in our planning activities in the desire of not repeating them in the future.

We still are not sufficiently using the achievements of science in forming the plans.

We have not fully settled the basic problem of the composition of the plan from the bottom to the top.

The group of specialists who work out the plan is still insufficient.

Modernization, reconstruction and expansion of the physical plant and other technical decisions are not completely provided with labor, material and financial resources.

The system of criteria and indicators for assessing economic operations of our divisions is still not complete.

As you can see there is still much to be desired in the planning techniques.

We must have a complete unity between the technical policy and planning. In recent years there has scarcely been any talk of a nationwide technical policy in the communications system, but rather a narrow departmental one. At present we know much better than anyone what we want and where we must go in technical terms. But, comrades, even the clearest technical policy will only be an empty declaration or meaningless chatter if it is not organically intertwined in our long-range plans.

As is known, we do not sufficiently use science in determining the rate and proportions in the development of communications. Instead of planning scientifically, we intuitively guess, and for this reason in some places our own forces are overestimated and in others underestimated. And here we have a scientific potential and our own computer center.

Another weakness of ours is the fact that we give much greater significance to the numerical indicators of the plan and neglect certain other essential functions of it. Our plan, aside from all else, must be an active stimulator or new ideas, original thoughts and modern production methods. And we have neglected precisely this very important active and creative function of the plan as the stimulator of progress in communications, to put it mildly. What gives us the right to feel that how we have served the citizens 30 years ago is the best for them and that they are very content and that in the same manner we must work and serve them in the next 30 years?

Our directors and chief specialists have still not assumed as their basic official obligation the continuous disclosing of new requirements and the continuous search for new methods to satisfy them.

All the leaders of the communications system must remember to bear in mind that we judge their activities not only from their qualities as good executors but also from their creative capabilities, their original ideas, their bold and new creative decisions, and from the reasonable risk which they assume in their daily work.

The leadership of the ministry gives particular attention to our foreign exchange earnings.

By 30 April, the ministry had fulfilled its foreign exchange plan for the socialist countries by 140 percent, and by 127 percent for the nonsocialist countries.

The National Party Conference posed as a task a 15 percent increase in the foreign exchange earnings. We will fulfill and overfulfill this goal, but all the reserves have still not been disclosed. These reserves are to be found in international telephone and telegraph communications, postal communications, the sale of philatelist articles and so forth.

3. Science in Practice!

It is impossible to speak about the socialist organization of labor and planned leadership of the economy without emphasizing the decisive role of science. Our institute has a long history and a good physical plant.

At the enlarged board meeting at the NIIS [Scientific Research Institute for Communications], I stressed that 40 years ago communications had created the institute, but now the institute must create the communications of the nation. This means that it must be concerned with practical communications problems.

We cannot speak seriously of new methods and approaches in planning if we do not have a sound scientific support from the institute. What will our engineering plans be if our scientific workers disregard them?

Can we speak of scientifically based standards, conditions or norms without the involvement of science in their elaboration? What is the share of the institute in solving practical problems? Without being impolite and saying none, we must say insignificant. I do not recall our board or operations department being concerned with demanding that the scientific workers introduce the applied assignments worked out by them.

Up to now there has been no such instance.

The reverse is correct, that we request, we demand and remind. How long will we speak in different languages? The data indicate that from 1967 up to the present the NIIS has worked out many subjects, some 356, but less than one-half of them has been introduced in practice. At the same time the costs of running the institute have increased and at present they amount annually to around 1.4 million leva. Unfortunately the 12 scientific subjects reported on each year as an average do not produce an economic effect which would cover the costs of the institute, and if we abandoned it to support itself, it would fail.

No one is stopping scientific daring, no one is restricting scientific search, but we must not be so amateur. We need outside help for major fundamental problems, but for the vitally important applied scientific tasks we must find the solution ourselves.

The observations which the leadership of the ministry has indicate that the NIIS possesses excellent personnel, true creators who burn with the desire for active scientific practical work. However, there are no forces which impede these noble motives. The leadership of the institute must give serious thought and first disclose the reasons which are to be found inside the very scientific administration of the institute, it must analyze them self-critically and decisively eliminate them.

A green light must be given to creative thought, to the labor feats in the scientific sphere and to the burning desire of the specialists to make their practical contribution.

4. The Problems of Sofia

Up to now in repeated statements before the board and at meetings we have outlined to you the policy of the leadership of the ministry on the organization and operation of the Bulgarian communications system. But in order that the entire system can function most completely and correctly, the development and operation of the communications system in the city of Sofia hold a central place. On our policy we have the clear understanding and support of the Council of Ministers, the department of the Central Committee and the party and administrative leadership of the capital. Again I would like to state that our policy for the city of Sofia remains unchanged for the future.

In the shortest period of time, the conditions of communications in the capital must be changed, and this immediately will provide a favorable effect for the entire communications system of the country.

An investment program is being drawn up for the development of communications in Sofia up to the year 1980. But this is not enough. The fulfillment of all the tasks which are found in this program requires a systematic, daily and stubborn effort.

There is a lag in the research and design work of the projects under the 168th Directive of the Council of Ministers. But if the folk saying comes true that the morning makes the day, this means that from now on the program is doomed to failure.

For the Telekomplekt ISO, continued Comrade Vanchev, the construction of the project in Sofia will be the touchstone for showing its viability and effectiveness.

For 2 years now, our specialists have been working slowly and with many hesitations and cannot choose an international telephone exchange for

delivery. But time is passing and does not wait. The longer we delay, the more the questions become complex. In adding to this the missed time for the designing and construction of a building, we will understand the criticalness of the date for solving this complex question.

If we want to be in step with the National Party Conference and understand its ideas, then we must have boldness and ambition to declare the construction and starting up of the international telephone and telegraph exchange as a crucial project in honor of the 12th BCP Congress. This must be one of the responses of the Ministry of Communications to fulfilling the decisions of the National Party Conference.

5. The Improving of Management

In order to carry out the program outlined by the National Party Conference, there must be a further improvement in the structure and functions of management in all the economic units of the communications systems.

Communications services are created in our numerous enterprises which represent the basic units of the communications system. They employ thousands of people, specialists and leaders.

These people must be entrusted with the solving of the economic problems of the units which they manage. In their hands already is the solving of the problem of the quality and efficiency of activities by the labor collective and the payment for its work. Hence at this time the leaders must show ability and knowledge, and they must think independently and creatively. However, some continue to live calmly far from the problems of the collectives, and rely on issuing instructions from above on all minor and major problems.

Others, few in number, do not keep up on innovations. Some feel that they are omniscient and modern leaders. This is nothing more than great complacency that they can do everything, that they know everything and do not need to learn. We do not show confidence in the junior personnel and do not promote them. We are afraid of giving them positions. We are not training junior personnel for the new complicated equipment which will saturate the communications system in the future.

The contacts of the leaders with the collectives and individual employees are not sufficient. They do not visit the places where the services are performed. An idea of the dynamics of communications activities and its social significance is lost. Some leaders do not want to leave their offices, and the people do not know them. They give orders by telephone, in letters or instructions, without realizing that a vital tie with the collectives is a manifestation of true leadership activity.

Comrade Todor Zhivkov is right a thousandth time when he has said that each ministry is a large staff for implementing the policy of the party

Central Committee and that the ministry is the servant of the individual enterprise. If an enterprise raises a question today, the ministry must settle it tomorrow. The staff of the ministry cannot impede the enterprise in delaying or deferring the settling of its questions.

These valid words of Comrade Todor Zhivkov apply fully to our ministry as well.

From the standpoint of the new requirements of the National Party Conference, it is essential to find optimum ties and relationships between the ministry and its divisions, in improving the coordination and reciprocal ties between the units of the ministry.

Then in his report, Minister Vanchev took up in detail the activities of the development unit under the ministry as well as the executive and control systems. With particular sharpness he stressed the need of a decisive improvement in the style and method of work, of abandoning formalism in carrying out various checks, in changing over to profound analyses and to conclusions and recommendations, and determining the dates for eliminating weaknesses. Only in this manner will there be a positive result from the work of the control system.

Comrades, the decisions of the National Party Conference are confronting us. But in order for us to feel their profoundness and significance, it is not enough to merely study and analyze the published materials. Concrete deeds are required, and a real contribution by each of us.

At present all the leaders of the communications system are confronted by the great and responsible task of mobilizing the labor collectives to carry out the tasks posed by the National Party Conference.

For example, in order for the ministry to achieve a rise of 5 percent in social labor productivity over the control figures in 1979, a productivity of 4,156 leva per person must be achieved, or a rise of 198 leva.

In 1980, however, social labor productivity must rise to 4,666 leva, or we must obtain an increase of 406 leva per person.

After achieving all the qualitative and quantitative indicators under the additionally posed quotas, in 1979, an average increase in the wage fund per person will be attained of 87.30 leva for the ministry. But in 1980, this figure almost doubles and is 168.83 leva per person.

As you can see, these are respectable figures which can be attained only by very constant labor, enthusiasm and the complete use of the hidden reserves.

But where are these hidden reserves and how must we seek them?

In the first place, the discrepancies must be eliminated in the dates for putting new exchanges and networks into operation. They must be completed simultaneously.

Secondly, the connecting circuits between the automatic telephone exchanges must be built and brought up to the standard.

Thirdly, the directions for the development of rural telephone communications must conform to the directions of economic development in the individual settlements and rayons.

Fourthly, to put the capacity of the long-distance automatic telephone exchanges into full operation.

Fifthly, to sharply improve the quality of the long-distance telephone calls handled.

Sixthly, to multiplex all the existing cable lines and radio relay lines.

Seventhly, to accelerate technical progress and new technology in the operation of telephone communications. To overcome the disproportion between the channels and lines of the long-distance automatic telephone exchange, during the present year the necessary switching equipment must be installed and the system normalized.

Eighthly, all measures are to be taken for constructing the automatic international telephone exchange in order to ensure the development of international telephone communications and their automation.

The reorganization of the Ruse Relay and Broadcasting Equipment Enterprise (PRPS) must also be set as a goal.

Then Minister Vanchev outlined the immediate tasks which must be solved by the Board: The network for data transmission, the construction and modernization of communications facilities in Sofia, supplying the necessary cables, building a long-wave transmitter, and so forth. The deputy ministers and directors must work up the appropriate proposals and submit them for review.

Here we cannot take up all the specific tasks, he continued, which arise from the decisions of the Party Conference. The board of the ministry is to approve measures for fulfilling the conference decisions. At present all the leaders of the communications system are confronted with the great and responsible task of mobilizing the labor collectives to carry out the aims posed by the National Party Conference.

Comrades, glorious are the deeds of the postal workers and our employees who work in communications. Excellent Bulgarians have readily dedicated their life and their youth for better working conditions and for a better

communications system. These personnel have been the heralds of the party's party in the past, and they are doing so now. To what degree the word of the party reaches each Bulgarian home depends upon the work and upon the ability of our large collective.

I am profoundly convinced that the sons and daughters of those who in the past dedicated their lives to the idea of communism will find in themselves the strength to carry out the decisions of the National Party Conference.

The ranks of communications are strong and will not flinch. We are all inspired by the spirit of April 1956 which finds its strongest affirmation of its just vitality in April 1978.

These are the fruits of that enormous labor of the first leader of our party and state, Comrade Todor Zhivkov.

Great tasks confront you. We have faced them and I urge you to steady labor for the brilliant future of our beloved motherland, Bulgaria.

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CZECHOSLOVAKIA

FIRST TANDEM TELEPHONE EXCHANGE SYSTEM DESCRIBED

Prague TELEKOMUNIKACE in Czech No 3, Mar 78 pp 33-36

[Article by Josef Kriz, Service Laboratory of the International and Inter-urban Telephone and Telegraph Exchange, Prague: "Fraternal Cooperation by the Builders of the Tandem System"]

[Text] In Czechoslovakia the first tandem telephone exchange equipped with an [Ericson] ARM 201/4 system was commissioned in Liberec at the end of 1977, in ceremonies attended by Engr Vlastimil Chalupa, CSc, federal minister of communications. He dialed the first call from Liberec to Prague. But the ceremonies were preceded by years of intensified effort in which technicians of practically all trades, economists, investment administrators, designers, blue-collar workers and test engineers took part. Some idea of the scope of this work can be gained if we consider that the total cost was about 70 million korunas and that work on the Liberec tandem exchange as a whole began in early 1973. These were years of intensive work by the participating organizations: the Foreign-Trade Enterprise for Precision Engineering Products; the Technical Center for Communications, Prague; the North Bohemian Communications Directorate, Usti nad Labem; the Okres Communications Administration, Liberec; the Directorate of Communications Construction, Prague; the State Planning and Design Institute for Communications, Prague; the Administration of Long-Distance Cables, Prague; the Telecommunications Research Institute; the organizations of the foreign suppliers, the Budavox Telecommunications Foreign-Trade Company and the Beloiannis Telecommunications Factory, both of Budapest; and other domestic and foreign subcontractors. This entire complex of builders was directed by the responsible investment organization of the branch, the MTTU (International and Interurban Telephone and Telegraph Exchange), Prague.

The significance of this investment project's successful completion lies not only in that it marks a milestone in telephone switching in Czechoslovakia, but also in that this was the first time in the history of communications that cooperation by individual organizations developed on such a scale. The investment project gradually required the participation of ever-newer specialists, ranging from construction experts to translators

and interpreters. During the performance of their tasks, of course, the briefly listed participants in the construction of the first automatic telephone exchange in Czechoslovakia encountered an entire series of difficulties that had to be resolved on a day-to-day basis. The problems that arose for organizational, technical, language or other reasons often seemed insoluble, but in the end all of them were resolved. The lack of experience naturally meant that interplay among the investment, technical and service organs of the branch was not always optimal, but this was due to specifics of the professional activities and of the mentioned organs' competence. Nevertheless this extensive cooperation proved realistic and produced an abundance of experience that should be utilized on the construction of similar installations.

Technical and Investment Preparations

The start of this activity dates back to the early 1970's when Government Resolution No 150/1971 provided the decisive impetus for the commencement of a program to automate telephone service throughout Czechoslovakia. In the course of the investment task's elaboration it was decided to use as the supplier of the technology the Beloiannis Telecommunications Factory of Budapest that produces the Swedish ARM 201/4 system under license. The use of this new system in the Czechoslovak telephone network had to be tested. The Telecommunications Research Institute in Prague, the investor organ of the branch--then the Communications Construction Directorate, Prague, and subsequently the MTTU, Prague--and the State Planning and Design Institute for Communications, Prague, were assigned the task of selecting, on the basis of a suitable network situation and the general investment program, a suitable location for the construction of the first, demonstration tandem exchange in Czechoslovakia. The Liberec tandem office became the selected site.

In conjunction with this decision the preplanning and concrete investment preparations were begun that included, among other things, a series of domestic and international negotiations. The difficulty was in that the ARM 201/4 system was entirely new to practically all participating officials, and the negotiations required a good knowledge of English and German, without which it was practically impossible to prepare the inquiries and offers, the basic technical specifications, and the entire correspondence. For at that time no background information was available. The system's documentation, if at all available, was in foreign languages. Later, in 1974, the MTTU, Prague, which became the investor for the construction of the Liberec tandem exchange, the Technical Center for Communications, Prague, ensured translations of the documentation. Thanks to these efforts, and to the effective help of officials of the Central Communications Directorate, Prague, a wider circle of the interested officials did gain more thorough knowledge of the new system, although with some delay.

Simultaneously with the preparation of the tandem exchange's technology there necessarily arose a no less difficult task, that of incorporating the tandem exchange into the telephone system, together with the solution

of the so-called tie-in projects, i.e., the design and execution of the necessary technical modifications on the equipment (exchanges) working jointly with the new tandem exchange. For this task, similarly as for the tandem exchange itself, it was necessary to prepare a feasibility study and drafting problem. But unlike for the tandem exchange's technology, here it was necessary to become acquainted practically with the complete state of the entire telephone system, not only the Liberec tandem office but all other switching centers with which the new tandem exchange was expected to work in the future (the other tandem offices). It was not always easy to prepare and ensure these conditions for cooperation. Despite the willingness of the coworkers at the offices involved, it was often difficult to determine the actual state of the local technology from the viewpoint of the telephone system. Very often the planning and design documentation was not up to date, and thus to a large extent it became necessary to verify the state of the technology locally. This situation considerably complicated the work of the MTTU as the investor and elaborator of the drafting problem, and also of the State Planning and Design Institute for Communications, Prague, that subsequently prepared the plans.

Construction of the tandem exchange with its new switching system, and its incorporation into the telephone network obviously necessitated a new solution for the technical servicing and maintenance of the technology and circuits. Therefore a monitoring center was designed which takes into account, already in the tandem exchange's capital construction, central monitoring of the technology and circuits, including their record-keeping, testing and measurement. The technical provisions for this were ensured at the Liberec tandem exchange. At present, however, the monitoring center's technology is incomplete, because items of equipment are still lacking.

In addition to these purely technological chores, comprehensive preplanning preparations were made for all the structural modifications that the construction of the tandem exchange required. Similarly as in the preceding stage of the preparations for the tandem exchange's capital construction, many difficulties had to be overcome that stemmed from a lack of experience. The problems concerned particularly the securing of subcontractors for the individual activities. A proportion of the problems in this respect were resolved through the voluntary initiative and team help by officials of the investor and of the user (Okres Communications Administration). The lesson to be drawn from this fact is that such help should be excluded as far as possible, by providing professional subcontractors.

Realization--Capital Construction of the Tandem Exchange

In this chapter belongs primarily the installation of the tandem exchange's equipment. The Beloiannis Telecommunications Factory, Budapest, performed all the installation work with its own personnel. The supplier's staff of about 45 workers alternated on the project. Their trades ranged from locksmith to test engineer. During roughly 19 months, they assembled and tested the tandem exchange and its power supply equipment.

Progress of the installation work provided much information that can serve as valuable experience for other projects of this kind. One of the most important lessons is flexible cooperation between the technical inspectors and the chief of installation. Here many of the problems can be pinpointed as they arise, and thus they can be resolved quickly, without formal procedures based on entries in the construction log. This is one method of practical friendly cooperation between partners.

Another example of interpreting this form of cooperation was that the Czechoslovak partner (customer) lent the supplier tools (saws, drills, etc.), which created the conditions for a certain lead in the fulfillment of the planned tasks. Progress of the installation work unquestionably was enhanced also by the exemplary accommodations provided for all employees of the supplier, and also by moving all deliveries to the construction site without delay. Such transportation was provided primarily by the workers of the Okres Communications Administration, Liberec.

On the other hand we must appreciate the efforts of some of the supplier's employees who learned various Czech words and expressions, whereby mutual dialog between the Czech and the Hungarian personnel became easier.

Although the form of turnkey construction employed in Liberec produced savings in terms of Czechoslovak installation capacity, it also created certain difficulties. The problems of providing accommodations and related services were fairly considerable. But the greatest difficulty was in that the employed form of construction makes the customer dependent on the supplier.

If more-serious situations arise that cannot be resolved informally, the customer has practically no way of having the arisen problem resolved on the spot, because the supplier has final responsibility for the delivery as a whole, by the specified time limit. For this reason there is no room for possible comments, e.g., on the technical execution of the work, on the quality of partial deliveries, on changes in the final plans, etc.

This form of construction unquestionably was necessary on the first tandem exchange, but the gained experience shows that it is not the best form of construction. On balance, however, it can be established that construction of the Liberec tandem exchange was good. We should express our appreciation to our friends and hope that the experience we gained in Liberec will be applied to the construction of other tandem exchanges in the future.

Technical Acceptance of the Exchange From the Supplier

A no less demanding activity in conjunction with the construction of the tandem telephone exchange was technical acceptance of the equipment from the supplier. The purpose of this activity was to exercise practical control over the performance of the tandem exchange, i.e., over the fulfillment of the basic technical specifications agreed upon between the supplier and the customer, over fulfillment of the project's specifications and, last but not least, over the quality of the equipment supplied as well as of the

installation work. A final condition was to test the functioning of the tandem exchange as a whole, and its ability to work with the telephone system's existing equipment.

The situation in Liberec was exceptional in this respect because it is the first tandem exchange of this type in Czechoslovakia, and thus a demonstration tandem exchange. This meant that exhaustive tests and measurement had to be made. Besides the Service Laboratory of the MTTU, Prague, as the investor, therefore, officials of the Telecommunications Research Institute, Prague, also participated in the acceptance of the exchange. The latter concentrated on the fulfillment of the basic technical specifications by the supplier. Later they reviewed also all modifications of the ARM 201/4 system's line equipment that were the subject of additional development at the Beloiannisz Telecommunications Factory, the supplier. Jointly with the investor's technicians, they finally tested in detail both the internal functioning of this system and its compatibility with the rest of the telephone network.

Acceptance is one of the most demanding activities on capital construction projects of this kind. It is demanding both technically and organizationally. In view of the fact that only 30 days were planned for technical acceptance, this activity had to be planned in detail. Preparations in the case of the Liberec tandem exchange were made well in advance, and yet much was left to be desired for perfect acceptance. Experience showed that first of all it is necessary to utilize all the possibilities provided by the contract to ensure the participation of the customer's workers in the installation tests. Scant use was made of these possibilities in Liberec. The result was a shortage of time that could be solved only by working extended shifts. From this experience we must derive for the subsequent tandem exchanges measures that will not completely eliminate the time shortage, in view of the size of the equipment, but will significantly influence the acceptance itself as well as maintenance later on. The entire planned maintenance personnel and at least some technicians of the acceptance team should participate in the supplier's installation tests. In this way they will not only become acquainted with the procedures of the tests, which cannot be performed exhaustively in the 30 days allowed for acceptance, but will ensure in this manner also control of the supplier. We need not emphasize that this experience is especially important for maintenance. In order to utilize this experience in practice, however, it is essential that these workers be trained thoroughly before their assignment. By this we mean theoretical as well as practical instruction in the system and its functioning. We probably need not explain in detail why it is unconditionally necessary to gain thorough knowledge of the documentation, namely of the system's documentation and the planning and design documentation, and also of the equipment itself, to permit necessary application in both directions: the application of the documentation to the equipment, and identification of the equipment in the documentation. Such knowledge presupposes timely training of the carefully selected personnel. So far as the maintenance personnel at the Liberec tandem exchange is concerned, for example, we may say that this personnel has the elementary knowledge necessary for

maintenance, but we cannot claim that this knowledge has been gained through instruction. What we know today is largely the fruit of individual diligence, prompted by necessity and interest. This of course cannot be regarded as a satisfactory way of ensuring the operation of such a large investment as a tandem telephone exchange.

From the preceding paragraphs one might gain the impression that problems, if any, occurred only among the operating personnel. This is not so, and the above paragraphs are generally valid. By way of explanation we should emphasize another important fact: the language barrier in cooperation between the supplier and the telecommunications workers. This problem proved to have a very strong influence, even though there was an obvious effort on both sides to make themselves understood. The official language was German, but not all workers of either partner had a nearly perfect knowledge of that language. The difficulties and frequent lengthy arguments, in cooperation as well as in work on the documentation, were sometimes hard to resolve. Therefore, knowledge of foreign languages must be taken into consideration when selecting workers for acceptance, and particularly for operation. At least a reading knowledge of German or English is essential.

Tests and Measurements

A group of five technicians from the Service Laboratory of the investor (MTTU, Prague) was assigned to technical acceptance. The group was backed up by six workers from the Okres Communications Administration in Liberec, and by three workers from the Telecommunications Research Institute. This was the key personnel for acceptance of the equipment. They performed the technical measurements and functional tests, and also other control activity such as mechanical control, of the tandem exchange's technology (ARM 201/4) as well as of its power supply.

The technical acceptance team also established and tested all the appropriate circuits for the tests, including the link-up equipment such as the DVk, DVn and TV 66 relay sets, the incoming and outgoing group selectors for the P 51, the manual switchboards MZ 36 and MK 611 in Chrudim, and the PK 202 simulator in Liberec. All this work was performed in its entire scope during acceptance, as the need arose. To this fragmentary list of activities, however, we must add a comment on the cooperation and willingness demonstrated by the workers of the Administration of Long-Distance Cables and repeater stations, particularly in Liberec, in establishing test circuits, without which it would have been very difficult to test the functioning of the tandem exchange.

All these generally listed activities that had to be ensured during the acceptance process are largely peculiar to the specific position of the Liberec tandem exchange. The fact that the Liberec tandem exchange is a demonstration exchange resulted in an entirely peculiar method of testing. For this purpose the Liberec tandem exchange was ideally divided into two equal transit exchanges, with all the necessary equipment. One was the L or Liberec part, and the other was the U or Usti nad Labem part. In this

way it was possible to mutually test two tandem exchanges of the ARM 201/4 system, directly or with the intervening equipment of the original Czechoslovak technology. This method of testing was exceptionally demanding on the cooperating central offices and their equipment. Furthermore, such connection permitted tandem operation and testing in so-called large loops when, for example, the outgoing relay sets of the U part were linked through the appropriate Czechoslovak trunk relays and possible repeater stations, to the relay sets of the incoming ARM at the L part. And then in the normal manner through the LP (line-link frame) of the ARM to the designated central office (SMTO, OUTO, OMTO, etc.) in Liberec or Usti nad Labem. In the loop tests the supplier's test equipment, the so-called Multicalltester, was used with good results. This is essentially an automatic active subscriber that generates ten calls simultaneously. At the terminal to the target central office it calls a passive equipment in which all ten called numbers are set. By simple comparison, when the called and the set numbers agree, the passive equipment signals back that the call has been answered. With such equipment, designated the STPR, it is then possible to evaluate the total number of calls, and the number of correct and wrong-number calls.

This equipment was used for actual testing, but mostly for the statistical tests. In addition, ten sets of the Czechoslovak-made Automatic Subscriber TE-KA also were used in the tests. This equipment functions in such a way that from a subscriber's extension phone it calls itself, or it reacts to the standard tone (800 Hz) transmitted by a remote passive automatic subscriber, which is then evaluate as an answered call. It should be emphasized that this equipment requires modification to work with a remote automatic passive subscriber. The use of the mentioned Multicalltester or of the ten domestic automatic subscribers creates favorable possibilities for detecting possible undesirable dual connections.

As mentioned earlier, this equipment was used primarily for functional tests. For the other partial functional tests we used also the STPR-MFC equipment, or the supplier's dial or single-purpose equipment, with subscriber telephone sets.

The electrical parameters were checked almost exclusively with the measuring instruments of the Telecommunications Research Institute, because the instruments that the investor had ordered were not yet available at that time. Here it will be necessary to adopt measures to ensure that measuring equipment will be available for future acceptance tests, in which the Telecommunications Research Institute will not participate on the same scale as now.

Attention in the measurements was devoted primarily to the following:

To the KSD dial senders where the pulse duration, pulse spacing and pulse separation were controlled;

To the control of the nominal levels of the MFC senders KS-MFC, specifically to the level at the crosspoint;

To the call in the incoming register from the individual types of relay sets, FIR-ZL-H, FIR-ZTV-Y, and FIR-TV-Y;

To the control of receivers MFC-KM-MFC during the reception of two signal frequencies of the prescribed level (basic technical specifications) within the allowed tolerances;

To the control of the offering-signal receiver SPN according to the specifications (basic technical specifications);

To the 2700-Hz offering-signal generators, from the viewpoint of the desired level and also of the departure from the nominal frequency;

To the timing of the pulse repeaters;

To the timing of the automatic message accounting pulses, from the viewpoint of their prescribed length and also of their proper assignment to the appropriate relay sets;

To the control of the relay sets with permanent signaling, from the viewpoint of the change of the signal channel's state, and of the pulse duration necessary to clear the relay sets;

To the control of the privilege time of the registers, dial senders, MFC senders and repeaters.

In addition to these measurements, also the transmission characteristics of the exchange were determined, namely:

The net loss of the overall connection and of the exchange's connection;

The attenuation distortion;

The crosstalk attenuation inside and outside the exchange;

The dissymmetry;

The return loss;

The noise level, measured both linearly and psophometrically;

The intermodulation distortion;

The group delay distortion.

All these measurements were performed according to the basic technical specifications, in both directions of the built connection, and the results satisfy all the requirements formulated in the basic technical specifications.

After all these tests and measurements, the statistical tests were begun. The Multicalltester equipment, automatic subscribers, subscriber sets, and automatic switchboards ARM 201/4 were used for this purpose. An evaluation of the results showed that the proportion of wrong-number calls was about 1.0 percent in the case of calls made through the ARM and the operating equipment (P 51, PK, etc.), but only less than 0.5 percent in the case of calls made solely through the ARM 201/4. These results satisfy not only the specifications of the Czechoslovak telecommunications system but also the recommendations of the CCITT.

Mechanical Control

According to the experience gained in Liberec, no less attention should be devoted to this part of the acceptance test as to the electrical and functional properties of the supplied equipment. The need for this is underscored by the fact that the exchange uses, in addition to the various types of relays, approximately 800 crossbar switches (depending on the size of the capital construction project), and multirelays that previously have not been used in the Czechoslovak telephone system. The state of adjustment established at the commencement of the acceptance control does not allow us to disregard these mechanical parameters. This is again a question of time, which is at a premium during the 30 days planned for acceptance. Therefore it is recommended to conduct this control with a lead time of two or three months, before the commencement of actual acceptance. This allows the supplier to make the necessary corrections, without creating a general bottleneck. Of course, the necessary personnel for this task must be trained in due time. At the Liberec tandem exchange it became evident that it is desirable to let at least one maintenance worker specialize in the mechanical control and necessary adjustment of the new equipment.

In addition to the mentioned tests, controls and measurements, the voltage losses on the saturation lines, the contact resistances and the quality of the grounding were checked randomly. Furthermore, the temperature and relative humidity were monitored throughout the entire acceptance period in the premises where the mechanical equipment was housed. The results of these measurements satisfied the requirements of the basic technical specifications, and of the general Czechoslovak state norm.

Organizational Experience

Three organizations participated in the acceptance of the tandem exchange: the Telecommunications Research Institute, the Service Laboratory of the MTTU, Prague, and the Okres Communications Administration, Liberec. The division of labor among these organizations was essentially such that it was the duty of the Telecommunications Research Institute to guarantee the properties of the system, and therefore its workers performed primarily the control of the basic technical specifications, including all the measurements. The functional, mechanical and other control and auxiliary work was performed jointly by the workers of the Service Laboratory of the MTTU, Prague, and of the Okres Communications Administration, Liberec. During

their work it became evident that perfect acceptance results require a certain specialization of the individual workers by the types of equipment. This leads to the following division:

Line equipment, the servicing of the relay sets and of their cooperation with external equipment;

Register equipment, the servicing of the KS and KM registers, and of the RS and KS register connectors;

Computation equipment, the servicing of the VM (translator), trunk-link frames, line-link frames, etc.;

Common and office equipment, the servicing of recording, automatic message accounting, etc. equipment.

The above division, of course, is formulated in general terms, but already during training it should be advanced so that these specializations arise. In this manner it will be possible to gain very detailed knowledge, and fewer technicians will be needed.

From this point of view it is necessary to train also technicians for the manipulation and testing of the circuits, so that the acceptance technicians will not be burdened with this work and can devote themselves fully to the appropriate tests and measurements.

Practical Incorporation of the Tandem Exchange Into the Telephone System

This part of the work associated with the construction of the Liberec tandem exchange was of a specific nature. Seemingly all the preparations and practical measures did not concern the technology of the tandem exchange. Most of the work was within the competence of offices under the Administration of Long-Distance Cables, because it was necessary to ensure circuits for the operation of the tandem exchange. It goes without saying that one of the basic conditions in setting up and connecting new circuits or reconnecting already existing circuits to the new technology was not to limit the existing service. This condition was an obvious one, but at the same time it caused complications in that it affected a significant proportion of the long-distance offices and investment projects. The establishment of new circuits within time limits that corresponded to the start-up of the tandem exchange, either for testing purposes or for permanent operation, caused in many instances bottlenecks in the work schedules of the individual investment projects under the Administration of Long-Distance Cables. For smooth cooperation and coordination, a team was formed consisting of workers from the following organizations: the MTU, Prague; the Administration of Long-Distance Cables, Prague; the Regional Administration of Long-Distance Cables, Usti nad Labem; the North Bohemian Directorate of Communications; the Kraj Communications Installation Plant, Usti nad Labem; and the Okres Communications Administration, Liberec. The

principal task of this team was to study the network, elaborate optimal solutions, and direct the work in the individual offices so that the requirements of the tandem exchange would be met on time, without service interruptions. Coordination and management of the individual projects proved expedient.

The bulk of the work in providing new circuits rested on the Okres Administration of Long-Distance Cables, Usti nad Labem, together with the Administration of Long-Distance Cables, Prague. They ensured the construction of new groups. In a number of instances it became necessary to re-allocate the primary groups. This was done by the cooperating repeater stations, practically without any interruption of service. Most of this work was done by the employees of the repeater station in Liberec.

Conclusion

This article presented, in condensed form, general information about the course of the entire capital construction project of the first tandem exchange in Czechoslovakia, built within the framework of the program to provide dial telephone service throughout the entire republic. In the communications branch this was the first large investment realized through mutual cooperation between Czechoslovakia and Hungary. As the first tandem exchange in the new ARM 201/4 system within the Czechoslovak telephone network, the Liberec tandem exchange is an important milestone in the history of telecommunications. It was built and placed in operation after years of intensified work by the collective of Czechoslovak and Hungarian technicians who were imbued with enthusiasm for the successful completion of their joint effort. The time has now come when this new tandem exchange will start paying interest, not only in terms of operation but also of the gained experience that can be applied to improve and facilitate similar projects for the construction of other exchanges in the telecommunications network.

1014

CSO: 5500

TELEVISION'S INFORMATION, MASS POLITICAL ROLE INCREASES

Budapest MAGYAR NEMZET in Hungarian 16 May 78 p 4

[Report on the festival in Miskolc, by Gabriella Locsei: "The Information Role of Hungarian Television Increases"; passages in slantlines in italics in original]

[Text] During the second half of the TV festival in Miskolc, the same topic was discussed by everyone, the role TV plays in information and mass politics. Did it become perhaps an ingrained habit to search and examine the mass communicational character of TV during these late Winter days in Miskolc? Hardly. It was not maniacal compulsion but ideological responsibility and professional honesty which induced the participants of the festival - audience, newspaper reporters, TV co-workers, politicians - to examine and clearly define how TV can correctly inform its nationwide audience/about international news, events of nations/. This was the theme of a professional debate on TV news service and TV reporting which was opened Sunday afternoon, with a speech by Gyorgy Marvanyi, TV news service coworker. This was discussed, in a report containing statistical data, by Dr Tamas Szecsko, director of the Mass Communication Research Institute.

Discussing the mass political significance of TV, Tamas Szecsko termed it a definitive historical accident that the beginning of TV use, in Hungary, coincided with the consolidation after 1956. He considers it the consequence of this fact that the Hungarian audience evaluates politics by the television and, inversely, evaluates television by the politics. According to the most recent surveys by the Mass Communication Research Institute, the audience, in general, is satisfied with the information service of TV. In contrast, statistics on audience response indicate a/drop in the rating of entertainment programs/. In evaluating these data, one must not forget that there is a close relationship between mass politics and entertainment. Those who state that the quality of TV entertainment programs decreased are inclined to also state that the level of all TV programs decreased. The mass political effect of TV cannot be narrowed down merely to the effect of informative and political programs.

The surveys of the Research Center also inform on the place and ranking of TV among the information media, press, radio. In terms of speed, radio still outranks TV. With respect to color, interest, reliability of data, informational detail, however, TV is gradually outranking radio and the press.

The political role of TV, however, is influenced not only by these advantages -- its speed, sightliness, etc. -- but also by the degree to which its programs become dialogues with the audience. The sometimes indirect, sometimes very real dialogue established between TV and its audience is effective only if TV is intimately acquainted with its audience. Every producer of the programs must fit himself into the state of mind, level of knowledge, view of life which characterizes his viewers at the given moment. In conclusion, Tamas Szecsko indicated that TV can effectively fulfill its mass political role only if, quoting Lenin's words, it propagandizes, agitates and organizes.

During the discussion following the lecture, Karoly Grosz, departmental head, Central Committee of the MSZMP, also spoke. He stated that, as a whole, he is satisfied with the work of TV; Hungarian TV prepares high level and good programs. Among the excellent programs, however, there can be found, at times, programs which entertain in accordance with conservative tastes. With respect to the informative work of TV, he stressed that the programmers must take into account that there is an increase in the people's sense of reality/throughout society. There is a continually increasing interest in economic and foreign policy matters. In contrast, it must also be recognized that there is no decrease in the dimensions of a layer totally indifferent to social matters.

It is an unrealistic assumption, however, that there will be a TV which pleases the entire nation. Neither the societal nor the political prerequisites are present for this. The critical comments aimed at TV are /guiding pointers/ both for politics and TV.

A development in the right direction can be noted in the information service of TV. The political fortitude of the creators increased and TV realized the institutional democracy in its programs. The ratio of the programs is also satisfactory, in general, retaining the current openness of the program structure. The one thing TV should pay attention to is to fit fewer commercial films in its program. On the other hand, it is the task of TV to gradually eliminate the societal differences existing in informed awareness, through its program policy.

As president of the Miskolc Festival jury, Karoly Grosz also mentioned in his comments that, in viewing the festival films, he regretfully noted that, while there was an increase in the political consciousness of the TV workers, their professional development is not nearly satisfactory. Politically well-conceived topics are ruined because of professional errors. Another great task of TV is to develop the professional culture

coworkers, participating in informative work, more consciously than before. A frequent error by the author, program director, program editors is a false interpretation of public demand.

TV must be aware of the acute political tensions arising in our society, for instance, the problems of existence faced by youth planning a family and the retired. One must consider these and one must pay more attention to the problems on TV than before.

Karoly Grosz praised the /foreign political work/ of TV. The specialists in the field were warned, however, to create and maintain a healthy ratio between foreign and domestic political programs. One must take care, he said, that the viewer should always be conscious where the Hungarian People's Republic stands in the world reflected by the varied TV news, reports and comments, who our friends are and which are the roads of development designated for us and by us.

The competition of films ends tonight. The work of the Miskolc Festival will be ended tonight. On Wednesday, a festive presentation of the results will announce which TV films, documentaries, reports were given awards by the festival jury, the press jury and the public of the town.

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BRAZIL

ECONOMIST: CRISIS IMPENDS IN TELECOMMUNICATIONS SECTOR

Sao Paulo FOLHA DE SAO PAULO in Portuguese 13 May 78 pp 22

[Article by Odon Pereira]

[Text] Atibaia--It is possible that there will be a serious crisis in the telecommunications sector in Brazil in the near future, particularly in the telephone branch. That crisis will occur within the next 2 or 3 years and will be a direct result of the sharp decline in investments by the Federal Government in the telecommunications sector.

This information emerged yesterday in an address that economist Martin lu (Institute of Economic Research Foundation, University of Sao Paulo) presented at the Seventh Telebrasil Panel Discussion on "Nationalization of Capital and Technology in the Telecommunications Sector," which has been going on in this city since Monday and is ending today with the appearance of Minister of Communications Quandt de Oliveira.

Lu's discourse was based on a text summarizing a study made by his group commissioned by Telebrasil itself and aimed, as an initial step, at evaluating the impact that investments in the telecommunications sector are making on the Brazilian industrial sector.

Some information given by the economist is truly alarming; in recent years TELEBRAS [Brazilian Telecommunications Corporation] and its regional branches handled an average of 700,000 new telephone terminals per year, maintaining the objective of the Second PND [National Development Plan]. But, at the present time, the annual contract for installation of new terminals does not exceed 300,000, and only with the greatest optimism can we believe this volume will remain stable; it has a tendency to decrease.

That situation is the result of a drastic "deceleration" or "cooling-off" suffered by the telecommunications sector, but Martin Lu called attention to something more serious; even before the cooling-off measures, this sector suffered an extremely serious blow, when the resources of the National Telecommunications Fund, which were intended to be used entirely for this

sector, were incorporated in the National Development Fund and used to subsidize other sectors, thus diminishing the return of the total received. This occurred precisely on 20 May 1974 by resolution of the CDE [Economic Development Council] and, therefore, before the cooling-off measures.

The University of Sao Paulo economist admits, however, that the critical situation in which this sector finds itself will enable it to re-evaluate its growth rate, which was very high up to that time--about 24 percent per year.

Impact

In reality, the study that economist Martin Lu summarized for all the participants of this panel discussion had another objective: to measure the impact investments in the telecommunications domain are having on the industrial sector, and on this alone (excluding the primary and tertiary sectors) and considering the impact only in relation to its internal effect, that is, without considering the role of the new terminal in the development of new business.

The result is significant: every cruzeiro invested in construction of telephone terminals generates 1.48 cruzeiros. That ratio was obtained on the basis of a study that evaluated the 58 Brazilian industrial sectors according to the definition of the IBGE [Brazilian Institute of Geography and Statistics] and rated the level of their influence through their investment in the telecommunications sector.

The figure is high. To give an idea, the highest of all generates 1.9 centavos per cruzeiro, and the lowest yields 1.03 centavos per cruzeiro.

The same figure places the communications sector among a group of 23 sectors, out of the total of 58, which have the greatest impact on the intersectoral relationship, when stimulated.

The conclusion is the same: a drastic and sharp decline in telecommunications investments will have a double effect. It can lead to semicollapse in the communications of large cities and, certainly, cause a crisis in at least 18 industrial sectors--those that are more stimulated to produce, provided that a new telephone is manufactured in Brazil.

Discontent of Business People

The coordinated action of countless number of federal organizations that intervene in the telecommunications policy, the selection of foreign investments, and market reserve for the domestic businessman were just three of the nine proposals that businessman Eugenio Staub of EGB-Control presented yesterday at the Seventh Telebrasil Panel Discussion, emphasizing that he was speaking as a domestic private businessman and would confine his remarks to the "Development of the Electronics Industry Using National Capital and Technology."

Referring to the recent report of the BNDE [National Economic Development Bank], Staub, quoting that report, made it clear that the electronics sector "is composed of a great number of bidders, the majority of whom have foreign control."

To demonstrate this contention (still according to the BNDE report), Staub recalled that a sampling made with 30 companies producing electronic equipment and components revealed that the billings of domestic companies amounted to only 6.2 percent of the total in 1976. At the same time, net profit from billings was 5.7 percent for domestic firms and allegedly 6.6 percent for foreign companies.

Paulo Martinez Neto of Elebras S.A., who spoke during the morning, also giving a view of the domestic businessman, said more ironically that domestic industry holds only 4 percent of the market, corresponding, in truth, to an "estimating error in the budget of the multinationals."

According to Staub, the foremost and greatest difficulty for the viability of domestic industry lies in the distance between the government says and what it does.

He recalled that, while the majority of developing countries throughout the world insist that foreign companies meet a countless number of requirements in order to do business within their territory, Brazil still continues to require "only a simple registering of foreign capital in the Central Bank."

Proposals

As for foreign participation in Brazilian development, the businessman repeated more than once that such participation is not only necessary but also welcome. He believes, however, that there are at least three conditions for foreign operations to be accepted in Brazil.

The first is strict selection of investments--and he cited the case of the minicomputer transaction, led by Geicom, as a good example of that requirements.

The second is to obligate multinationals, when feasible, to operate in conjunction with domestic capital. And, lastly, the multinational must agree to transfer its technology to an unlimited extent.

Staub harshly criticized the current procedure for financing a domestic company. Chiming in with his colleague Martinez (who spoke in the morning), he stated that nowadays development banks require a guarantee of as much as 150 percent for a loan. "That is, a loan is made to someone who already has resources, and the wife's act of cosigning or personal possessions are worth more than excellent ideas for the development of new technologies," he said.

He again spoke of Prof Gouveia de Bulhoes' recent proposal on changes in the country's financial market and stated that the former minister's proposals contain many solutions that could aid in making domestic industry viable.

BRAZIL

RADIOBRAS INAUGURATES SYSTEM COMBINING THREE STATIONS

Rio de Janeiro JORNAL DO BRASIL in Portuguese 13 May 78 p 15

[Text] Minister of Communications Euclides Quandt de Oliveira inaugurated yesterday in Itaoca, Sao Goncalo, a new broadcasting system combining, with a single antenna, the Radio Nacional, Ipanema and MEC [Ministry of Education and Culture] stations, belonging to RADIOBRAS [Brazilian Radio-telegraphic Company]. That is the only arrangement in the world that combines three 100 kw broadcasting stations; there is a similar one in the United States, with less power.

According to the minister, in using this system it is not the RADIOBRAS intention to compete with other broadcasting stations. It wishes only to serve as an example, a "guinea pig," through which the Ministry of Transportation can derive norms to be followed by private stations. As an example, he cited the requirement that 50 percent of the programming must include Brazilians, which have good results in the case of Radio Nacional.

Amazon River Region

Minister Quandt de Oliveira unveiled the commemorative plaque and cut the symbolic ribbon. Following that, Rio de Janeiro Cardinal Dom Eugenio Sales blessed the facilities. Indalecio Nogueira Diogenes, director of RADIOBRAS, made the first speech, emphasizing the priority his firm is giving to the Amazon River Region.

He advised that the Macapa station will be inaugurated at the end of June and that, by the end of the administration, those of Tabatinga, Cruzeiro do Sul, Sao Gabriel and, possibly, Tefe will be handed over. In addition, this year, RADIOBRAS will incorporate Radio Rural, which belongs to the Ministry of Agriculture.

The minister of communications said that the broadcasting stations belonging to the government are serving as a "guinea pig" and that the inclusion, in the new telecommunications law, of the requirement that 50 percent of the programming must be Brazilian music was tested at Radio Nacional in view of comments that such a requirement would reduce the number of listeners. He added that, in the case of Radio Nacional FM, the programming is 100 percent Brazilian and even that did not lessen its popularity.

BRAZIL

ERICSSON TO PROVIDE TECHNOLOGY FOR CPA INSTALLATION

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 1 Jun 78 p 32

[Text] Brasilia--LM-Ericsson, firm associated with Atlantica Companhia Nacional de Seguros, was chosen by the minister of communications to furnish technology for the production of Controlled Telephone Exchanges for Storage Program (CAP's) in Brazil. Notwithstanding its having won out over its competition, this firm will also have to fulfill certain requirements, handled by TELEBRAS [Brazilian Telecommunications Corporation], for the signing of the contract, through which 50,000 terminals will be ordered for the city of Sao Paulo.

Instead of just indicating the winner, eliminating the other two competitors--ITT, American and NEC, Japanese--Minister of Communications Quandt de Oliveira chose to classify the competing firms in first, second and third places. According to an official note published yesterday by the Ministry of Communications, this criterion was adopted, inasmuch as LM-Ericsson will have to include provisions in its bylaws, shareholder agreements and basic company documents that will assure the attainment of objectives contained in the industrial policy of the telecommunications sector, established by the ministry in 1975, which determined the procedures for introducing equipment of a new technology into the country's telephone exchanges, the CPA's.

Choices

Another justification presented by the experts for classifying the competitors is that, in this way, if the competitor in first place does not accept the requirements indicated by TELEBRAS in closing the contract, the firm in second place will be called upon to handle the contract; and, if the impasse persists, the firm in third place will also have an opportunity to accept, without the necessity of inviting new bids.

Despite all those explanations, most of the experts believe that LM-Ericsson will be the firm to introduce technology for the manufacture of the CPA s into the country, inasmuch as "its proposal is more compatible with the interests of the Brazilian Government." According to those same experts in general, LM-Ericsson's proposal needs only to be more specific in reference to having control of the capital and decision-making power in the hands of

Brazilians, as well as the most effective manner for transferring the technology.

Advantages

According to the experts, the operational facilities of a CPA, telephone exchange that does not require telephone operators for its operation, are observed from the time of their installation, as they occupy less space and have a noncompact structure. The CPA is assembled in a "modular" manner, that is, using separate pieces, which makes it possible to replace a defective component immediately. "It is more expensive to build a CPA than a conventional exchange, but its maintenance is much cheaper," the experts explain.

In addition to its technical advantages, the CPA installation provides conveniences for the users. The exchanges will be equipped to offer services, such as intercepting and transferring calls, upon request by subscribers. This means that, upon leaving and not having anyone to answer the telephone, the interested party can call the telephone exchange and ask for his number to be intercepted, indicating the number at which he can receive calls. This will be an automatic procedure without intervention by the operator, since the storage unit is electronic and receives the subscriber's instructions directly, registering the request in its memory bank.

Sao Paulo

The first controlled telephone exchange for storage program will be installed in Sao Paulo in December. "There will be two units for controlling the telephone exchange," the experts explained. "One is the brain that stores information and directs the rest of the system through computers; the second unit, computer-programmed, transmits the requests of the computers through electro-electronic components."

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'GTC' NEGOTIATES COMPUTERIZED MAINTENANCE SYSTEM

Georgetown GUYANA CHRONICLE in English 22 Jun 78 p 9

[Article by Courtney Gibson]

[Text]

THE Guyana Telecommunication Corporation is now moving towards the setting up of a qualitative/control maintenance system which will encompass both the preventative and corrective approaches to maintenance and which will make the fullest use of computer technology to ensure that a high quality service is provided telephone subscribers.

This was told to the Merriman Commission by senior personnel of the corporation at yesterday's sitting of the commission in the Boardroom of the Trade and Consumer Protection Ministry.

According to the Corporation officials the Maintenance Control Centre is regarded as the nerve centre of the corporation's operations. And, it is with this in mind that the maintenance control centre was being oriented around a computerised system.

It was also explained to the commission that the data processing cards to be used in the new arrangements have already been designed and printed. In addition, senior personnel attached to the corporation are now studying overseas with a view to equipping themselves with expert knowledge which will be demanded by the computerised system.

The new arrangement, the corporation officials explained, will at the same time provide more work for the corporation's computer so that it could justify its existence.

At yesterday's sitting the commissioners spent much time examining the organisational structure of the Operations Division of the GTC, and listening to suggestions for improvements in the structure and for improved efficiency.

The commissioners expressed some concern that the Operations' Manager who is in charge of the crucial aspects of the corporation's day-to-day functioning, was not a member of the Board of Directors and does not attend board meetings. They promised to examine this matter in greater detail at a later date.

The workers present felt that there was need for more trained personnel to cope with the volume of work and technology involved, better communication between management and non-management workers, a curb of absenteeism and unpunctuality and a more

clearly defined approach to the disciplining of employees.

A representative of the Residential Sector of the corporation's operations urged that technicians who also drive corporation's vehicles should be paid a commuted allowance instead of an allowance according to the number of miles they drive.

A representative from the commercial sector suggested that there was need for greater standardisation of equipment purchased by the GTC since the differences in technology coupled with the scarcity of sufficiently trained personnel poses serious problems.

He suggested further that technicians who are involved in the maintenance of equipment should be consulted by management before decisions to purchase new equipment are made.

The commission was scheduled to hear a report from the corporation on its findings based on complaints made by University of Guyana Lecturer, M.Z. Kurtyka about his personal experiences with the GTC since his arrival in the country last January.

However, the presentation of that report was postponed until today's sitting of the commission.

NEW RADIO REGIONAL TRANSMITTERS

Addis Ababa THE ETHIOPIAN HERALD in English 7 Jun 78 p 1

[Text] **Nine more radio regional transmitters are to be opened by about early next year, Ato Yihunbelay Mengistu, Head of the Educational Mass Media Service told the Herald here yesterday.**

The new radio regional transmitters will be centred in Dessie, Mekelle, Bahar Dar, Debre Markos, Gimbi, Robi, Alemaya and Asmara.

According to the head of the media service, so far educational radio programmes are being transmitted through the Addis Ababa transmitter located at Jimma Ber and Wolayita transmission centre. The regions covered in the programme are Shoa, Arssi, Sidamo, Gamo Goffa, partially Bale and Kaffa. The programme is being conducted in Amharic and English from Monday through Friday to regular students below sixth grade, Ato Yihunbelay noted.

Pilot Project

The Educational Mass Media Service is also launching a non-formal adult education programme in cooperation with the Wolayita Agricultural Development Unit (WADU) and the Agri-service Ethiopia. The programme will be conducted in three languages including Wolayita, Oromo and Amharic. The subject matters to be covered in this programme are, according to the head of the Mass Media Service, agricultural, health and political education in cooperation

with the Ministries of Agriculture, and Health and the Provisional Office for Mass Organizational Affairs (POMOA).

"This is our pilot project," he said. The afore-mentioned languages are selected for the very reason that the languages are widely spoken in the places where the two transmitters are located.

He said that as far as formal education goes, television programmes are also beamed for students in and around Addis Ababa. The programmes, which are being conducted on Monday and Wednesday evenings mostly deal with social affairs, he stressed. However, the service does not give much attention for the television programme for it treats a very limited coverage.

Speaking about future plans, he said, preliminary studies have already been completed to open up seven regional maintenance centres in the near future. The establishment of these centres will further strengthen the radio services the media is rendering in the various regions.

The Educational Mass Media Service is giving basic training in radio and TV programme production and on-job technical training, it was learnt.

TELECOMMUNICATIONS PROGRAM TO BE COMPLETED ONE YEAR LATE

Lusaka TIMES OF ZAMBIA in English 5 May 78 p 7

[Text] CAPITAL budget cuts by the Government and lack of local finances have affected the K75 million telecommunications development programme geared to decongest various exchanges and set up microwave links to every province in the country.

This was disclosed in Kitwe yesterday during the visit by Mr Dinshaw Joshi, a telecommunications expert from the World Bank, when he visited the new Kitwe exchange.

The programme, which is now expected to be completed in 1980, a year later than planned, involves the introduction of new 9,000 lines to Kitwe local exchange, group switching centres in Kitwe and Lusaka and microwave links between Luanshya/Lusaka, Chipata, Lusaka/Mongu and Mumbwa/Mongu.

The World Bank has given a loan of K25.6 million for the project while K17 million was expected from the Zambian Government to cover local costs and K28 million from the Posts and Telecommunications Corporation.

Mr Joshi, who was accompanied by PTC director of telecommunications, Mr Swatulani Munthali said

as far as the World Bank was concerned, the programme was going on smoothly, although problems of local finances to cover local costs would delay its completion.

As a result other projects within the programme would be shelved temporarily because of material shortages or delays in receiving equipment from overseas suppliers due to foreign exchange problems.

The World Bank is specifically involved in the construction of 35 exchanges and group switching centres which would cost K10.4 million while long distance microwave links would cost K12 million and the remainder of the money would be used for other equipment.

"I am satisfied with the way the programme is being carried out from the World Bank point of view but it is the local currency problem which is contributing to the delay in completing the programme," said Mr Joshi.

Mr Joshi's visit to Zambia is a result of cuts in the Government's capital budget announced this year. He has come to ascertain the effect of these cuts on the programme.

While in the country, he will review the financial problems of the corporation and discuss with the Government ways of solving them.

Mr Munthali said PTC had requested for K10.06 million from the Government this year, but they were only allocated K3.05 million making it difficult for the corporation to work at a faster pace.

Despite the problems, he said, the new Kitwe exchange, would be operational next month at the same time as the group switching centres in Lusaka and microwave links between Luanshya and Lusaka.

Improvement

"The first phase will be to get rid of the present congestion now prevalent on our phones and later make an overall improvement in our communications system throughout the country.

"Further, the long awaited microwave link between Luanshya and Kitwe, which is funded by the World Bank, will be commissioned at the same time. This will greatly relieve the problems of communications between the rest of the country," he said.

It was also announced that tenders for the microwave link for the Mumbwa/Mongu sector had been received and were now being considered by the corporation.

The Lusaka/Mumbwa sector of the link is already being installed and would be commissioned by the end of July.